

STATEMENT OF BASIS

Tennessee Valley Authority
Colbert Combustion Turbine Plant
Colbert County
705-0008

This proposed renewal to the Title V Major Source Operating Permit is issued under the provisions of ADEM Admin. Code r. 335-3-16. The above-named applicant has applied to renew its existing Title V Permit, which was originally issued on April 1, 2004. The applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans and other documents, which were originally submitted on September 26, 2008. On October 1, 2013, the Department requested an updated renewal application. The updated application was received on April 4, 2014 (postmarked April 1, 2014). The Colbert Plant has now ceased all coal-fired power generation. As such, a new renewal application was submitted on September 2, 2016. Additional information was submitted to update the application on March 18, 2019 and May 16, 2019. All information is attached hereto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit.

The permittee has quantified its facility-wide greenhouse gas emissions in the renewal application. There are no greenhouse gas requirements applicable to this facility other than those found in the Greenhouse Gas Reporting Rule, which is implemented by the USEPA.

The significant sources of air pollutants at this facility are:

- Eight simple cycle combustion turbines (CTs)
- Emergency Fire Pump Engine

The eight simple cycle CTs are utilized during peak demand and burn either No. 2 fuel oil or natural gas. Each CT is rated at 847.2 mmBtu/hr and generates a nominal 71.6 MW electrical output. The CTs are subject to state regulations and the Cross State Air Pollution Rule (CSAPR). The CTs are not subject to regulation under the Acid Rain Program per 40 CFR 72.6(b)(1), which states that simple cycle CTs that commenced commercial operation before November 15, 1990, are not affected units. The CTs were installed prior to the October 3, 1977 applicability date of 40 CFR Part 60 Subpart GG. Therefore, these units are not subject to Subpart GG.

Eight 71.6 MW Simple Cycle Combustion Turbines

Emission Standards

Opacity:

The Permittee shall not discharge to the atmosphere an opacity greater than 20%, as determined by a six-minute average, except that one six-

minute period during one sixty-minute period, the Permittee may discharge into the atmosphere particulate of an opacity not greater than 40%.

[ADEM Admin. Code r. 335-3-4.01(1)(a) and (b)]

Sulfur Dioxide (SO₂):

Each CT shall not burn fuel oil with a sulfur content greater than 0.5%.

[ADEM Admin. Code r. 335-3-5-.01(2)(a)]

4.0 lb/mmBtu

[ADEM Admin. Code r. 335-3-5-.01(b)]

These units are also allocated SO₂ allowances under the provisions of the Cross State Air Pollution Rule (CSAPR). TVA must hold sufficient allowances in its unit accounts to cover actual SO₂ emissions.

[ADEM Admin. Code r. 335-3-5-.06 through 335-3-5-.14]

Nitrogen Oxide (NO_x):

These units are also allocated NO_x allowances under the provisions of CSAPR. TVA must hold sufficient allowances in its unit accounts to cover actual NO_x emissions.

[ADEM Admin. Code r. 335-3-8-.16 through 335-3-8-.33]

Expected Emissions

Opacity:

Visible emissions are not expected during normal operation.

Sulfur Dioxide (SO₂):

Per AP-42 calculations, each CT is expected to operate with worst-case SO₂ emissions of 428 lb/hr.

Periodic monitoring/Compliance Assurance Monitoring (CAM)

CAM is applicable to sources on a per-pollutant basis only if all the following criteria are met:

- The source must have an emission limit for the pollutant.
- The source must use an air pollution control device in order to comply with the limit.
- The source must have a pre-controlled potential-to-emit greater than the major source threshold (100 TPY for criteria pollutants; 10 TPY for any individual HAP; 25 TPY for a combination of all HAPs).

All three of the above-listed criteria are not met for any pollutant emitted by the CTs; therefore, CAM does not apply.

Opacity:

Since visible emissions are not expected from the CTs, it has been determined that no periodic monitoring for opacity is required.

Sulfur Dioxide (SO₂):

Records of sulfur analyses of fuel oil utilized in the CTs shall be maintained in a form suitable for inspection.

Stationary Reciprocating Internal Combustion Engines

TVA operates one stationary reciprocating internal combustion engines (RICE) at the Colbert Plant.

- Emergency Fire Pump – FP-1 (376 bhp)

This engine is subject to 40 CFR 63, Subpart ZZZZ, “National Emission Standards for Hazardous Air Pollutant Emissions from Stationary Internal Combustion Engines.” Additionally, the Emergency Fire Pump is subject to the provisions of 40 CFR 60, Subpart IIII, “Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.”

Emission Standards

Opacity:

The Permittee shall not discharge to the atmosphere an opacity greater than 20%, as determined by a six-minute average, except that one six-minute period during one sixty-minute period, the Permittee may discharge into the atmosphere particulate of an opacity not greater than 40%.

[ADEM Admin. Code r. 335-3-4-.01]

Expected Emissions

Opacity:

Opacity is not expected from either RICE unit during normal operation.

Periodic Monitoring/Compliance Assurance Monitoring

CAM is applicable to sources on a per-pollutant basis only if all the following criteria are met:

- The source must have an emission limit for the pollutant.
- The source must use an air pollution control device in order to comply with the limit.
- The source must have a pre-controlled potential-to-emit greater than the major source threshold (100 TPY for criteria pollutants; 10 TPY for any individual HAP; 25 TPY for a combination of all HAPs).

The above-listed criteria is not met for any pollutant emitted by the RICE unit; therefore, CAM does not apply.

The federal rules listed above include work practice standards and recordkeeping that is deemed as sufficient periodic monitoring for the RICE unit.

Opacity:

As mentioned above, opacity is not expected during operation this source. Additionally, this unit is utilized for emergency purposes and operate infrequently. Therefore, additional periodic monitoring for opacity was deemed unnecessary.

Based on the above analysis and pending the resolution of any comments received during the 30-day public comment period and 45-day EPA review, I recommend issuing the attached renewal MSOP for TVA's Colbert Combustion Turbine Plant.

Tyler Phillips
Industrial Minerals Sections
Energy Branch
Air Division

Date